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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/719,136	12/07/2000	Malcolm Barry James	COLLI-P-30/5	5715

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EXAMINER	
LUK, EMMANUEL S	

ART UNIT	PAPER NUMBER
1722	

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/719,136	JAMES, MALCOLM BARRY	
	Examiner	Art Unit	
	Emmanuel S. Luk	1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 December 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 21-24 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. These are intended use limitation of an apparatus claim and do not further limit the previous claims.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 18-31 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Cavazos in view Kostura (4072181).

Cavazos teaches a mold (12) that contains a closed chamber (14) having a liquid coolant that is vaporized, the liquid vapors are cooled by the condensing means (20), and the liquid then flow back into the liquid (Col. 1, lines 39-46). The liquid level of the chamber covers at least part of the area of the mold to be cooled and the manifold (16) holds the space above the liquid that contains the vapor of the liquid. The mold temperature is controlled via sensor (29) that sends a signal to the temperature controller, this in turn adjusts the a control valve (33) for the controlling water flow through the condenser, thus changing the reducing the or increasing the cooling water flow through the condenser depending upon the difference between the temperature sensed by the sensor and the set point in the controller (Col. 2, lines 50-65). The valves (26, 36) are used during the startup process, but are normally closed during the stabilized operation (Col. 2, lines 66), therefore, during normal operations there is a single quantity of liquid that flows through the space.

The valves (26, 36) are used during the startup process, but are normally closed during the stabilized operation (Col. 2, lines 66), therefore, during normal operations there is a single quantity of liquid that flows through the space.

The heat exchange means is claimed in the alternative in regards to the condensing means. Therefore, the heat exchange means limitation is taught by Cavazos because Cavazos teaches the condensing means.

In regards to the conditions of the liquid and vapor, these are not structural limitations of the mold and are functional limitations that are not given weight.

Cavazos fails to teach a second conduit, heating means in the liquid the mold is a mold for molding plastic materials, the mold is a die for mold casting metals, mold is a mold for injection molding of plastic materials, and the mold is for molding by thermoforming of plastic materials.

Kostura teaches an apparatus for regulating the temperature of a mold, the apparatus having two conduits (12, 14), wherein one of the conduits leads to a cooling condensing means (20), and the vapor returns to liquid. Kostura also teaches heating means (51) and a sensor (52) for controlling the temperature of the mold.

It would have been obvious to one of ordinary skill in the art to modify Cavazos with an second conduit and heating means as taught by Kostura because it allows for a continuous serial flow if the cooling fluid through the system (Col. 1, lines 36-39).

In regards to claims 21-24, these are intended use of the mold. Cavazos clearly teaches a system for cooling a mold system, and the mold is well known for use in the shaping of materials. That the material can be metal, plastic materials only depends on the material used for making the mold due to the temperatures of the molten materials. Thus, it would have been obvious to one of ordinary skill in the art to modify Cavazos with use of the mold for the various molding of materials because it is an intended use of an apparatus.

5. Claims 32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cavazos.

Cavazos teaches two different methods for start-up of the molding process, one method is initially partially filling the system with the phase change liquid, such as distilled water, as the mold is heated up, the air is purged from the system via bleed valve (26) until moisture reaches the detector (34). Here, the air containing the vapor is extracted from the system. The other method involves opening the valves open, heating the mold and then releasing water into the system, as it evaporates, thus starting the air purging process as the valve remains open until the moisture sensor (34) detects the presence in the evaporation path through the molds and closes the valves.

Cavazos fails to teach a second passageway.

In regards to the second passageway, Kostura teaches an apparatus for regulating the temperature of a mold, the apparatus having two conduits (12, 14), wherein one of the conduits leads to a cooling condensing means (20), and the vapor returns to liquid. Kostura also teaches heating means (51) and a sensor (52) for controlling the temperature of the mold.

It would have been obvious to one of ordinary skill in the art to modify Cavazos with an second conduit and heating means as taught by Kostura because it allows for a continuous serial flow if the cooling fluid through the system (Col. 1, lines 36-39).

6. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cavazos.

Cavazos teaches two different methods for start-up of the molding process, one method is initially partially filling the system with the phase change liquid, such as

distilled water, as the mold is heated up, the air is purged from the system via bleed valve (26) until moisture reaches the detector (34). The other method involves opening the valves open, heating the mold and then releasing water into the system, as it evaporates, thus starting the air purging process as the valve remains open until the moisture sensor (34) detects the presence in the evaporation path through the molds and closes the valves.

Cavazos fails to teach a method of filling the chamber with liquid and extracting a portion of the liquid without introducing the air.

However, Cavazos teaches alternative methods to purging the chamber of unwanted gases and filling it with the liquid and the vapor of the liquid. The methods taught by Cavazos include means that does not need the use of a vacuum and thus does not call for pumps and other extra equipment that would be needed to purge the system. It is a known alternative in the art to have filled the chamber with water and pump the excess water out thus creating a space without having unwanted gas or vapors other than the vapors from the liquid.

It would have been obvious to one of ordinary skill in the art to modify Cavazos by substituting the purging methods using the valves with known methods in the art of purging the system of unwanted gas.

Response to Arguments

7. Applicant's arguments filed 3/31/2004 have been fully considered but they are not persuasive. The applicants first argue the concerning the reference of Cavazos and

the phases within the chambers and conduits. However, Cavazos teaches the claimed structural limitations of the invention and the concentration of arguments concerning the vapor and the liquid phases has been noted but do not further limit the apparatus. The arguments concerning a second conduit/passageway have been noted. The newly amended claims by the applicants further specify the second conduit and heat exchange means. However, the new rejection of the claimed invention with Kostura reflects the claimed second conduit passage and heat exchange means. In regards to the states of phase states of the liquid and vapors, these are not structural limitations of the structure and do not further limit the structure.

In regards to the applicants arguments concerning claims 32-34, the two methods taught by Cavazos in Columns 3 and 4, teaches two methods of starting up the condenser and the new rejection for claim 32 and 34 now reflects the second conduit. In regards to claims 33 and 34, the startup methods of filling up the chamber and to not introduce air is taught by Cavazos. The variation is that the air is purged from the chamber.

Examiner notes that the previous rejection of claims 32-34 had incorrectly included claim 31 in the rejection and that claim 31 should have been included in the rejection of claims 21-24 and 30. The new rejections reflect the changes.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel S. Luk whose telephone number is (571)

272-1134. The examiner can normally be reached on Monday-Thursday 8 to 5 and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ben Utech can be reached on (571) 272-1137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EL

Joseph S. Del Sole 4/18/05
Joseph S. Del Sole